VOL. 6 JANUARY • 1949 NO. 1

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JOURNAL OF THE CANADIAN SOCIETY OF RADIOLOGICAL TECHNICIANS

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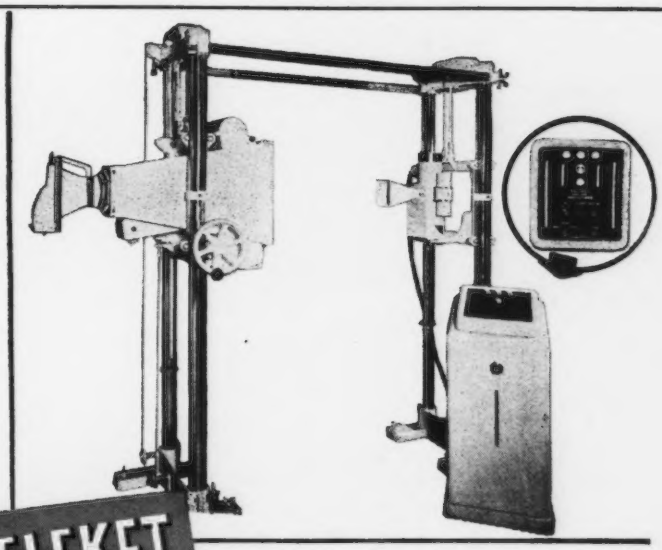

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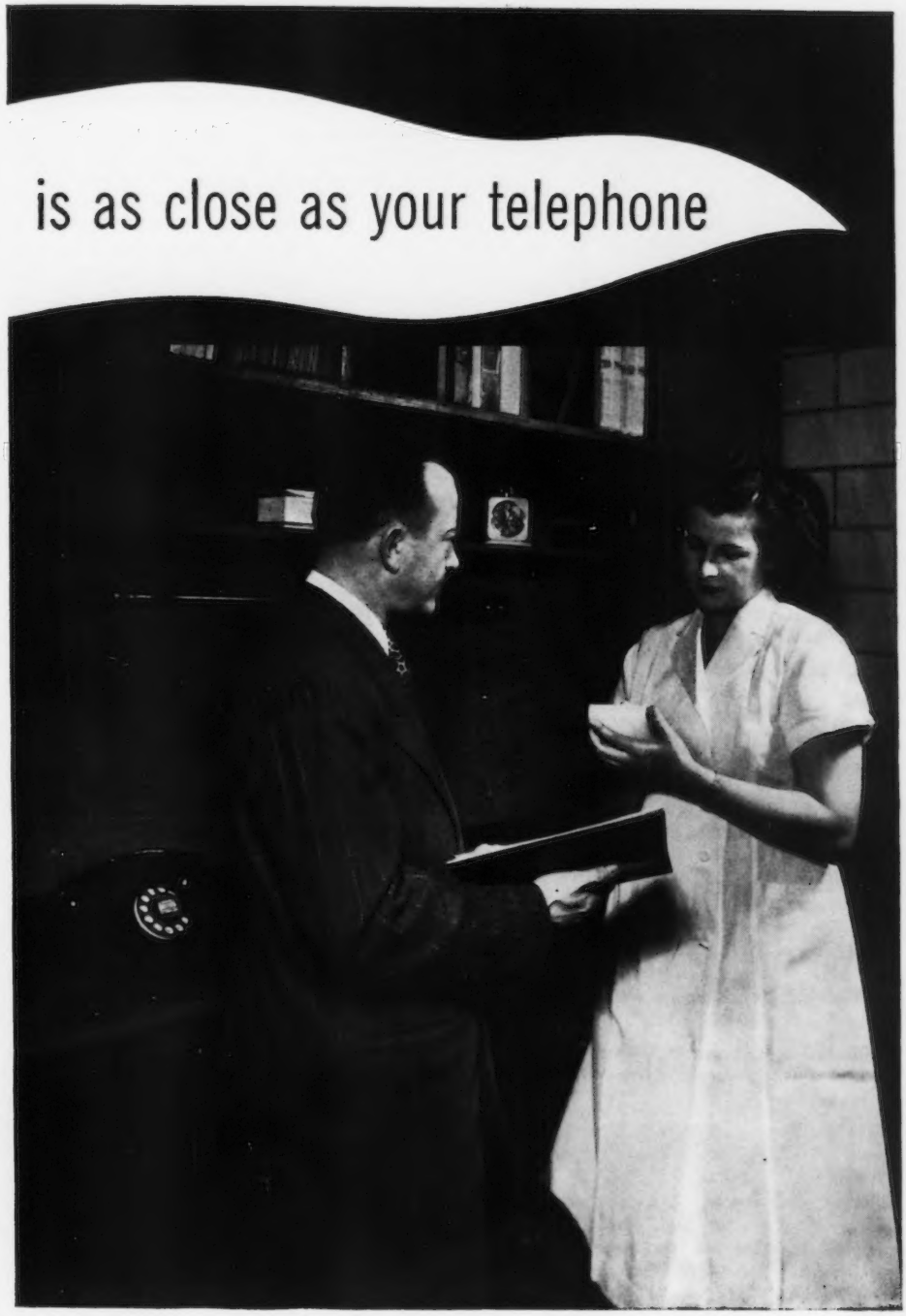
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News Items from the Provinces

ALBERTA SOCIETY OF RADIOLOGICAL TECHNICIANS

The Calgary Society of X-ray Technicians held its November meeting at the Colonel Belcher Hospital. Dr. K. D. Symington gave a very interesting paper on the Gall Bladder, illustrated with slides and films. The matter of funds was discussed and a start made towards the raising of some funds. Miss Hendrie provided a very attractive wood cut which will be raffled this month.

Another November event was a Hallowe'en party held at the home of Mrs. A. R. McIntyre, which was very much enjoyed.

Then in December we had our annual Christmas party in Harris's Sky Room with an attendance of sixty members and friends. Dr. W. H. McGuffin was the guest speaker and a very fine speech it was, short, amusing and very much to the point. Other radiologists present were Drs. Bell, Porter and Symington and another guest of note was Dr. Mullen of the Central Alberta Sanatorium. Mr. Peter Kirkpatrick entertained with songs and, assisted by Miss Muriel McLean, led the party in the singing of Christmas Carols. A short skit, written by Mrs. Peggy Quint Dalphond and Miss Jo Sutton, was enacted by Mrs. A. R. McIntyre, Herbert M. Welch and yours truly. Our audience seemed to enjoy it very much.

We are sorry to report the recent illness of Miss Vera White but hope she will be back on the job soon.

Mrs. M. Shaw and Miss P. Sponer have resigned from the staff of the Calgary General Hospital and have been replaced by Mr. Stan Kathrens in charge of the Department, assisted by Miss Aileen Short, both of the Holy Cross Hospital. Another new member on the staff of the General is Miss Doris Pearson, who transferred from the Pathological Department to the X-ray Department. Miss Wanda McNamee, formerly of Dr. McGuffin's office, is now at the Holy Cross Hospital, and a member from Winnipeg has been appointed Chief Technician at the Holy Cross Hospital. Miss Shirley Grieve has been moved to Drs. Florendine's and Porter's office and Miss Hendrie and her staff also moved to Medical Arts Building. Jack McGhie, formerly of the staff of the Colonel Belcher Hospital, left, joined the Picker X-Ray Co. of Canada and has been replaced at the Colonel Belcher Hospital by Foss Bolton. We have another new staff member in a student capacity at the Colonel Belcher Hospital in the person of Peter McMillan, who is in the Army Medical Corps. Another newcomer is Mrs. Lois Quigley, formerly of Saskatoon, who is on the staff in Drs. Florendine's and Porter's main office.

Calgary thinks that there are a lot of people who would like to receive The Focal Spot and solicits the help of Alberta members in making known to Radiologists and other interested parties that it is available at $2.50 per year.

And now we have had our January meeting which presents the usual lot of new resolutions and a brand new slate of officers as follows:

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News Items from the Provinces

ALBERTA

continued from page 4

We regret to hear that Mr. Toni Kuzyk, formerly on the staff at the Central Alberta Sanatorium, is ill and now inactive.

Please note that fees for Calgary Society, Provincial Society and Dominion dues are all due and payable and must be remitted to the Dominion Society before the 15th of February.

BRITISH COLUMBIA SOCIETY OF X-RAY TECHNICIANS

The November meeting of our society was well attended when Dr. Boyd of the Vancouver General Hospital gave a very interesting talk on Fluoroscopy. He was accorded a very attentive hearing and at the conclusion of his address he was thanked on behalf of the society by Mr. Jack Blair of the Victor X-Ray and all members showed their appreciation by a hearty round of applause. After Dr. Boyd's address nominations for the executive for 1949 were accepted.

The December meeting was held at the Nurses' Home at St. Paul's Hospital and after business had been cleared up the election of officers took place. This election brought one or two new faces into the limelight. The result of the election was as follows:

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MISS M. GATES

A great deal of work has been slated for 1949 and it is hoped that the members accord every support possible so that meetings will be well attended and our society will prove to be Canada's finest.

The Annual Dinner and Dance was held at The Ranch on the North Shore and over a hundred and fifty members and friends attended. The arrangements were under the expert guidance of Mr. Jack Blair and the members owe him a great deal for his untiring efforts in making this such a huge success. Mr. Blair was ably assisted by a very capable committee and everyone who attended certainly enjoyed a very pleasant evening. Next year it is hoped that we can hold our annual dinner and dance in one of Vancouver's large cabarets. The response to the last one certainly would warrant aiming a bit higher.

HEAR AND THERE

Dues are now due and we have a new treasurer to look after our money. The increased rate is now in effect and although members will have to dig up a few more dimes I am sure they will understand that it takes a lot to run a society such as ours in times like these.

Mr. Jerry Saunders of Victoria was over in Vancouver during the holidays renewing old friendships.

We regret the recent fall of snow which for the past three weeks has been hampering our travels. It is decidedly unusual but as nothing can be done about it we must endure it.

We hear that Miss Jean Stordy has recently become engaged to Dr. Fenwick of Shaughnessy Hospital. Jean has been a member of our society for a long time and every member would like to extend our very best wishes to her at this time.

May we take this opportunity of wishing all members of our own society and also all members of the C.S.R.T. best wishes for a Happy and Prosperous New Year.

—W. Q. STIRLING, R.T.,
Sub-Editor.

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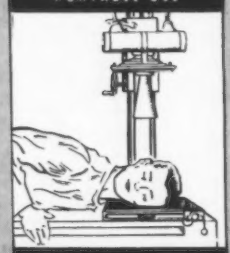

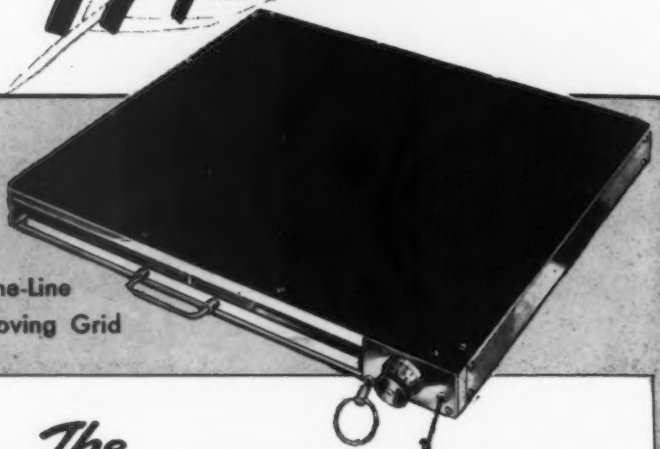

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The Focal Spot

Journal of the Canadian Society of Radiological Technicians

EDITOR
LESLIE J. CARTWRIGHT, R.T.

Volume 6 TORONTO JANUARY 1949 *Number 1*

Photo Fluorography

By R. HALL McCOY, M.D.

Canadian Car and Foundry Co., Montreal, P.Q.

AT the very outset of this discussion it might be well to review what we mean by photofluorography. As you are all well aware, when Roentgen rays from a suitable source are allowed to fall on a screen composed of certain chemicals these chemicals will glow and as a result emit visible light. If, then, a subject is placed between the Roentgen ray source and the screen, an image will appear on the screen due to the differing intensity of the rays resulting from their passage through the patient. This well known phenomenon is made use of every day in the fluoroscopic room. Unfortunately the image so formed is fleeting and is not much more permanent or stable than a reflection in a mirror. Oftentimes because of the thickness of the part to be examined, the intensity of the image is low and examination of the screen by usual visual methods is unsatisfactory.

Fluorography has been described as the process of recording this type of fluorescent screen image by means of an optical system and light sensitive film.

The aim of fluorography is specifically to reproduce accurately the fluorescent screen image with a maximum of sharpness and with adequate contrast to permit accurate evaluation of details. As applied to medical wohk one aim is to replace visual fluoroscopy by a less dangerous method and better documentation (or recording). At this point is might be of interest to digress and examine into the history of this principle, when it began and how it came to the present state as exemplified by the type of apparatus we have to-day.

In 1895 Roentgen announced the discovery of x-ray and immediately afterwards, in January, 1896, Battelli and Garbasso described a process for making records of fluoroscopic screen images. In March of the same year MacKay described another method. Porcher, in 1897, published an article in which he felt that direct radiography was better than photofluorography, which he considered to be impractical. In 1909 Biesalski and Koehler outlined a method of using a blue screen and a camera with a f/2.0 lens. In 1911 Caldwell established the basic criteria which should be fulfilled for successful photofluorography. He demonstrated beyond question that the camera records much more than the eye can see on the fluorescent screen and with scientific accuracy he correctly prophesied that the method would attain great practical value. Many other workers in Britain, France and Germany made their

* Presented at Sixth Annual Convention C.S.R.T., Quebec, June, 1948.

contributions over the years. Since fluorography dates back practically to the time of the discovery of x-rays it seems strange that its use was not developed earlier, but it must be borne in mind that it was not until recent years that suitable screens, powerful x-ray tubes, high speed camera lenses and highly sensitive film emulsions were developed and without these fluorography would not be possible.

In the period beginning about 1925 and extending onward to the present day there has been an increasing interest in all communities in the control of pulmonary tuberculosis, and it was early realized that the x-ray was an invaluable tool in helping to find early cases. However, the methods which could be used were none too flexible and as a result only two methods were available, one was the use of the fluoroscope, which would give no permanent record, and the other the use of 14 x 17 film which was a slow and expensive method. In 1936 De Abreu, in Brazil, popularized the use of 35 m.m. photofluorography, and in 1937 D. O. N. Lindbergh of Illinois introduced De Abreu's system in the United States. In 1939 the first commercial 4″ x 5″ apparatus made its appearance in the United States. This whole matter was accelerated by the beginning of World War II and the passing of the National Selective Service Act in the United States. Here was a need for a method of chest x-ray examination which would be speedy, accurate and cheap. Naturally the immediate thought was to use photofluorography and in the period from 1941 to 1944 over 20,000,000 photofluorographs were taken in the United States alone.

Two methods of recording the image were employed. One photographed the image on cut film (sheets) 4″ x 5″, the other recorded the image on roll film 35 m.m. in width. Many radiologists have felt that the 35 m.m. film was too small for accurate reading, but they prefer the more favorable feature of not having to stop and change a film holder between each exposure, so eventually it was decided to compromise the ease of handling of the roll film with the advantages of the larger cut film size, thus the 70 m.m. roll made its appearance. As was said before the aim in fluorography is specifically to reproduce accurately the fluorescent image with a maximum of sharpness and with adequate contrast to permit accurate valuation of detail.

Several factors governing quality of results:

(1) The efficacy of the radiant energy to excite fluorescence. In medical radiology the image of the incident Roentgen ray beam is limited by the capacity of the tube and by the tolerance of the patient's skin.

(2) The light-producing power of the fluorescent screen which varies qualitatively and quantitatively according to: (a) Chemical composition of the screen; (b) The color energy distribution of the fluorescent radiation.

(3) Sharpness factors that are dependent on other screen characteristics: (a) Graininess of screen structures, whether it is coarse or fine; (b) Time-lag of screen.

(4) The speed of the lens; that is its power to pass the maximum amount of light, and the sharpness of the lens when wide open (or at full apperture).

(5) The sensitivity of the film to the light emitted by the screen.

In order to spare you all a great deal of weighty calculations it can be stated very briefly that it is because of the

limitation of the optical system that longer exposures are necessary in photofluorography than in direct radiography; photofluorography requiring an exposure of at least twenty times that of direct radiography. Obviously this length of exposure would overload the tube and might conceivably endanger the subject being examined. If we are willing to sacrifice some sharpness of detail by enlarging the focal spot of the tube, making the screen with larger granules and a thicker coating, then the exposure time can be reduced to about three times that required for direct radiography. Some of the loss of sharpness can in turn be made up by the fact that the projected image of what appears on the screen is reduced in size and consequently there is more light per unit area on the film than would be the case if the film took a picture the same size as the image on the screen. By calculation it can again be shown that if the tube to screen distance is reduced to three or four feet instead of the usual six and if the tube voltage is raised by about thirty per cent, better sharpness may result.

Returning again to the present machine and in order to explain certain features which appear on it, it must be remembered that in mass radiography the ability to work with a minimum of delay is essential, hence the use of roll film. If all exposures have to be set up beforehand as is the usual procedure with direct radiography and the exposure based on milliampere-seconds with the time always fixed at either 1/40, 1/20 or 1/10 second then it means that K.V.P. has to be changed according to the measurement of each chest examined. This business of chest measurement is not only slow but can be definitely inaccurate with the result that fluorographs are obtained whose densities cannot always be compared either from subject to subject or between films made at different times on the same subject. Realizing this difficulty in his work with the U.S. Public Health Service, Dr. Russell H. Morgan, who is now chief radiologist at Johns Hopkins, developed an instrument known as a phototimer. This photoelectric timing mechanism electronically controls the length of the exposure. Basically the mechanism by its inherent design terminates x-ray exposure at the instant when a film has received the proper quantity of radiation to insure correct exposure. Since this apparatus works by varying the time of exposure it is possible for the same K.V.P. and milliampere settings to be left at a constant figure. The difference in the thickness of the chest is taken care of by the timer which will let the tube stay on for a longer or shorter period according to the density of the subject being examined. It can be readily appreciated that because of this automatic timing feature the controls necessary for the exposure on such a set can be reduced to a minimum. In this particular set only two K.V.P. settings are available for photofluorography, namely 80 and 100 K.V.P., and a selection of 150 and 170 milliamperes.

From the description of the machine one would gather that there is nothing to do but put the machine in operation, place the patient in front of the screen and press the exposure button. However, like all highly automatic apparatus many things can and do go wrong, and for this reason the skill of the technician is still needed in order to obtain best results. Many users of this equipment have complained that it is necessary to repeat a large number of examinations on 14 x 17 film because the smaller films show an

unsatisfactory appearance of the apices; these are cloudy, indistinct or hazy. It has been our experience that proper posturing is more important in photofluorography than in ordinary radiography of the chest. Unless the apex region is brought in as close relationship with the screen as possible a large air space exists between the chest and the screen with the result that distortion occurs from secondary radiation and defraction of the beam as it passes from tissue to air and thence to the screen. In the past attempts have been made to use a grid in order to control distortion, but these grids tend to lengthen exposures which are already long. Especially is this true in the case of heavy-chested men. If the exposures are unduly long the mechanical safety timer cuts the exposure before the tube can be overloaded even though the phototimer is still operating. As a matter of interest we are planning to install one of the new Patterson 2-B screens which has about thirty per cent more light, and incorporated in this will be a very fine grid. We are hopeful that this will help us in reducing the haziness of the apices without increasing exposure time.

The next difficulty that arises is that of film processing. This is usually done in a tank and one must be extremely careful of the choice of developer as well as the time and temperature. Since each roll of film carries about 440 separate exposures on it, it is easy to see how one small mistake can ruin many hours of work. We have found one of the greatest difficulties is that of under-development. The reason for this is that most technicians feel that if these films are left in the developer for ten to twelve minutes there is the danger of fog developing on the film. However, this does not appear to be the case within reasonable time limits. Fresh developer should be used for each roll of film in order that developing time can be accurately gauged and since the whole process is in a closed tank one cannot watch the development as you can in the regular tank with cut film. When the film is wet it must be handled with great care in order not to scratch or otherwise mark the emulsion.

We have been using this method of chest examination for over four years and have found it to be most satisfactory, but it is still necessary to exercise great technical skill and care even though many phases of the operation are automatic.

To all of you who operate this type of equipment, I would say to be extremely careful in the posturing of your subject even though it may cut down slightly on the number of examinations done per hour. Time will be saved in the long run because fewer recheck examinations will be required. Once again all of this care and skill will come to naught if the greatest care is not exercised in the processing of the film.

Positioning in Lateral Radiography
of the First Three Dorsal Vertebrae

By SISTER MARY DAVID, R.N., R.T.
Halifax Infirmary, Halifax, N.S.

IN the ordinary lateral view of the dorsal spine, the three upper vertebrae are practically obliterated by the dense overlying shadows of the shoulder girdle. "Alas," quoth ye old-tyme technician, "could one but for a fleeting instant disconnect and lay aside the patient's humeri and scapulae!" Since the barrier cannot be removed in such barbarous fashion, the problem is to avoid superimposition of the shoulder image, yet preserve the true lateral position of the spine itself. It has been common practice to substitute a slightly oblique view by rotating the patient about ten degrees back from the lateral position. [1]

Excellent work on this region has been done by James C. Fletcher who describes a technique [2] resulting in a true lateral projection of the upper spine with a minimum of overlying shadows. A side-tilt of the shoulders is used in place of rotation, with the shoulder near the film raised as high as possible, arm forward, and the other shoulder pulled caudad and the compression band tightened. However, in using this excellent technique, another problem arises, that is, a patient in pain often finds this position quite trying, and resents being "tied down" by the immobilizing device. Quite by accident, we evolved the following position, which with a minimum of discomfort to the patient, gives a radiographic result equal to that of Fletcher's method. Our method is as follows:—

The subject is seated laterally before the upright Potter-Bucky diaphragm, with a 6½" x 8½" film centred to the second dorsal vertebra. Control settings are made, and the tube centred at 36", without tilt, using a 7.5 cm. cone. The patient is then asked to bring his chin down to rest on his chest, and to cross his arms in front, flexed at the elbows. If possible, the point of the right elbow is fitted into the crook of the left, or vice versa. This draws the whole shoulder girdle upwards and forward, and "thins out" the heavy musculature of the back. Final adjustments of Bucky and tube are made; for best results it is noted that the central ray should pass through the posterior aspect of the vertebra (D-2). The patient holds his breath after a medium inspiration, and the exposure is made. Then the cassette is removed from the tray, the marker placed over that portion that was protected by the heavy anterior structures, and the identification "flashed" on by a quick exposure, the remainder of the cassette being protected by a lead mark.

During the four years since we discovered this technique, it has afforded valuable radiologic information in a number of obscure cases, and is included routinely in all our examinations of the dorsal spine.

Technical Factors Used:

Film—Dupont "502".
Screens—Patterson "Par," 6½" x 8½".
Cone—7.5 cm.
Tube—1 mm. rotating anode.
Potter-Bucky diaphragm (upright).
Distance—36". No tilt.
MaS.—400*.
K.V.P. 76* for average patient.

Note—*A good starting technique is that of your 72" Lateral Cervical view, which with the halved distance should give desirable results. It is essential to keep the K.V.P. factor fairly low, else the contrast is easily destroyed in this view.

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DR. GORDON E. RICHARDS

A Tribute

By PERCY GHENT

FOR twenty-nine out of the thirty-six years we served on the technical staff of the Department of Radiology at Toronto General Hospital, the late Dr. Gordon Earl Richards was our Chief. That relationship with one of the foremost radiologists of his day was in itself a privilege constantly in mind. Yet it was but a part of a long association that is now a memory most grateful. Through all those years he was a faithful, tolerant friend, slow to censure and quick to praise. When he assumed command at the department in 1917 we were first to greet him. Vividly, on that fateful day, his appearance is recalled. A straight, soldierly young man with fiery red hair appeared at the sole little desk then in use. He was just home from service with the R.A.M.C. in Egypt and the Dardanelles, and deciding he was much too healthy-looking to be a patient, we asked if there was anything we could do for him. He smiled, and his response came in the characteristic, semi-humorous manner that was to become so familiar: "If things develop as I hope, you will probably be doing things for me for years to come."

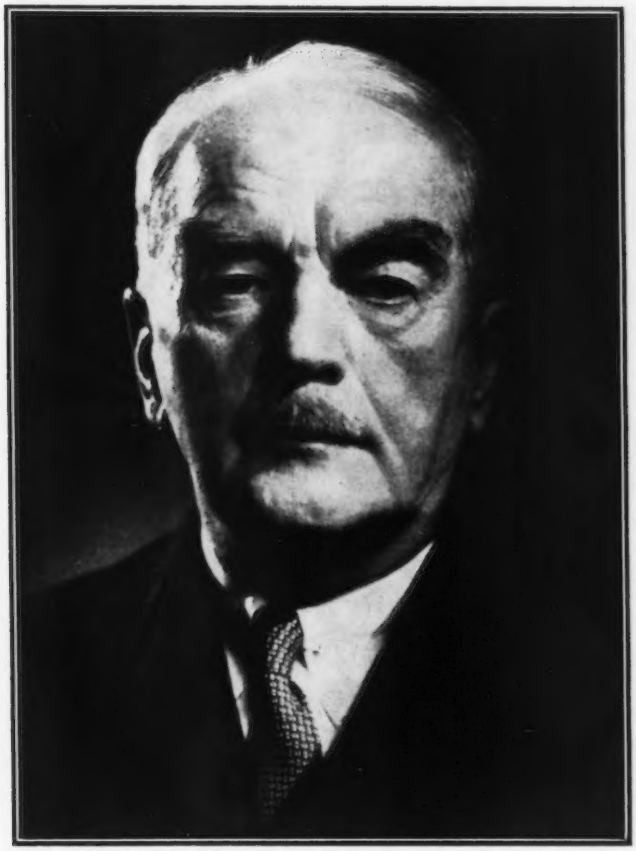
From that moment he was the beloved Chief it was a delight to serve. With enthusiasm that came from the heart we introduced him to members of the medical and surgical staff of the hospital as opportunity came. Sometimes, and amid merriment, we introduced him to former friends and fellow-students of his at the University of Toronto, men he knew infinitely better than we did. He thanked us profusely when we made him acquainted with Dr. Adam Millar who happened to be his room-mate for years during university days. "Always wanted to know the fellow," he grinned.

In 1920 he invited us to accompany him to the Canadian Medical Association annual meeting at Vancouver. His joy at being back on the Coast, scene of his earliest practice, was immense. In Vancouver itself, motoring over Vancouver Island, sailing to Seattle, Victoria and Prince Rupert, he told us story after story about his early adventures in British Columbia, and of the affection he cherished for that province. Especially fascinating were the yarns he related about his service as medical officer in a booming gold-mining camp away in the north, and of how he became a member of the famed Arctic Brotherhood. It was a glorious holiday, that trip to the West with "G.E.R." and memories of it are still radiant.

Back in Toronto the Department of Radiology at the General Hospital enjoyed an amazing expansion under his guidance. From the original two technicians and one stenographer, the staff — radiological, technical, nursing and clerical — grew to approximately one hundred workers. On the therapeutic side to which Dr. Richards gave his major concentration, the results of his thoroughness, his research and originality leading to a world lead in the percentage of healings in some instances, are too well-known to need comment here. Nor do we need to tabulate his numerous contributions to the literature of radiology or the honors at home or abroad that came to him. His name was a shining one in the annals of his chosen field, and his fame will endure, for he was great both as a scientist and humanitarian.

And a few days ago, with another staunch friend of the beloved Chief, Mr. T. B. (Tommy) Hurst, we stood beside the casket of Dr. Richards in its setting of a great bank of flowers. Hour after solemn hour we stood while fellow-physicians, friends and former patients filed by to pay their final tribute of affection and respect. Standing there we thought sadly of the friend we had lost, of the long career he had devoted to suffering men, women and children, and of the great price, life itself, he had paid for that unselfish service. His last brave letter to us, dated the 8th of October, 1948, told of the aplastic anaemia due to radium, from which he suffered, and said that his remaining days on earth would be very few. Truly, he was a great and beloved friend.

Gordon Earl Richards, M.B., LL.D., was born at Lyn, Ontario, north of Brockville, in 1885. His father, who was a Presbyterian minister, died when he was a child. He was graduated from the University of Toronto in 1908, gold-medallist in his year. He was an honorary member of the Royal Society of Medicine, a Fellow of the Royal College of Physicians and Surgeons, and a Fellow of the American College of Radiology. Two sons, Dr. Alan J. Richards and Donald R. Richards, both of Toronto, survive him. Another son, Flight-Lieut. Gordon S. Richards, was killed on duty overseas.



GORDON EARL RICHARDS, M.B., LL.D., F.R.C.P.(c), F.A.C.R.

1885—1949

Orthoroentgenography

As Applied to the Lower Extremities of Children

By L. J. CARTWRIGHT, R.T.
Toronto, Ont.

ORTHOROENTGENOGRAPHY is, as the word implies, a method of true radiographic projection without enlargement — at least in one direction. At the Hospital for Sick Children we apply the term Orthoroentgenogram to a radiograph of femora and tibiae on one film from which true and practically accurate measurements can be taken of the length of the long bones — from acetabulum to knee and from knee to ankle.

Experiments along these lines have been made at several centres during recent years, but with a rather limited publicity, hence this subject will probably be new to the majority of radiographers. Children to whom this method of radiography is applied are usually old poliomyelitis cases with one leg shorter than the other. Orthoroentgenograms are made periodically to check the rate of growth and from these subsequent treatment is decided.

The radiographs are made on a 36″ film without Bucky with a target-film distance of about 72″. This distance in itself reduces distortion considerably but true measurements can only be obtained by using the methods of projection which will now be described. The first method we used involves the construction of a rather elaborate cassette tunnel, each third of its length having sliding brass masks, Fig. 2. As an added refinement we split the masks in the midline so that in the case of a great difference in length of the two legs we could use different joint centering on the two sides. A compression band and a foot rest help immobilization, which must be carefully maintained throughout three exposures. A long pointer with a tip at right angles so that it moves along the surface of the cassette and registers the centering on the film is attached to the tubestand in line with the central ray. With the tube at six feet an exposure is made centering over the ankle joint. The bottom masks are then closed and the middle ones opened and another exposure centering over the knee joint is made. Then a third centering over the acetabulum. On the finished radiograph the measurement from joint to joint is almost correct anatomical measurement,* as the three exposures were made with the central ray running at rightangles through each joint. At the two junctures of the masked portions, at the middle third of the tibiae and of the femora, there is a few fractions of an inch of "lost" shaft, usually indicated by a slight break in the contour of the bones. Rough visual measurements are facilitated by the use of a cassette ruled in 2″ squares and filled in with white lead.

With very small children who will keep still and who will go on a 14 x 17 film, we use a similar technique except that not having a triple masking tunnel in this size we use a dental cylinder and make an exposure over each joint, the resulting radiograph showing the ankles, knees and hips in three discs. Measurements are taken in the same way from joint to joint and are entirely accurate, providing the patient is still.

We have recently experimented with the slit method of direct rightangular projection and this works out very well,

* There is theoretically a slight error due to the distance of the femur from the film, but this is very slight.

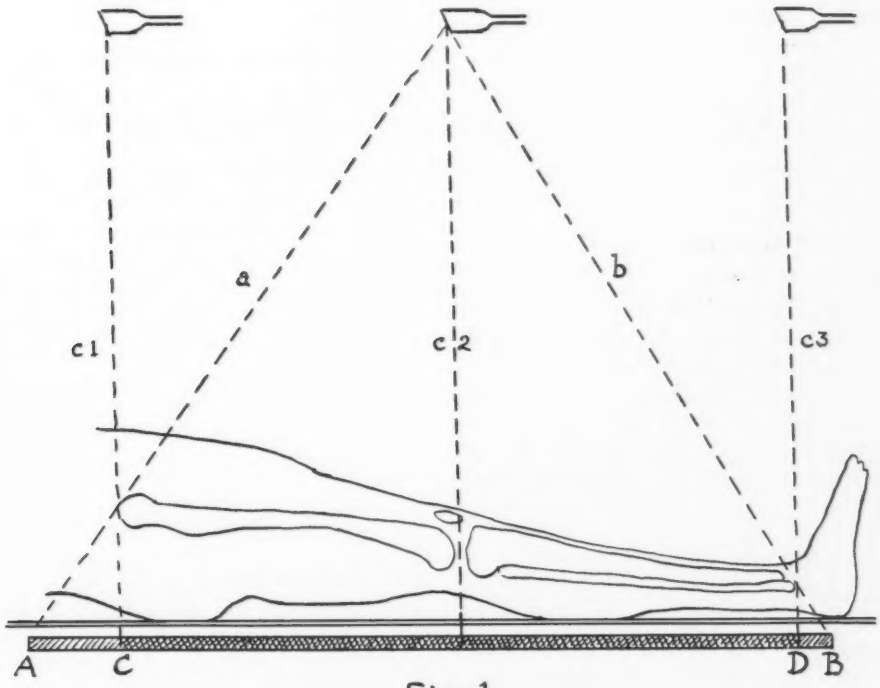


Fig. 1

Referring to Fig. 1 lines a and b represent diagramatically the divergence of the rays in an ordinary single-film teleradiograph. These rays produce a film image of a length represented by the line AB. However, if three exposures are made, centering over each of the three joints—hip, knee and ankle, the length of the film image will be as represented by line CD, the central ray in each case being shown as c1, c2 and c3. This image is virtually the same length as the actual bones.

the only special equipment needed being a brass or lead mask to fit in the filter channel of the tube and the 36" cassette. (Incidentally, it is impossible to get accurate results using two 14 x 17 cassettes end to end and we do not recommend that this be attempted.) The mask (Fig. 3) is made of brass one-eighth of an inch thick and has a slit 1/16" wide and 1" long cut transversly in it, that it at right-angles to the length of the table. With this method no film masks are used. The tubestand is moved steadily from ankles to hips with a continuous x-ray exposure. The narrow sheaf of rays projects to all intents and purposes directly at right-angles to the film and consequently achieves the same effect as the three-exposure method of centering over each joint, without the "lost" fractional portions of the long bones between the masks. With a 1/16" slit six feet from film the 1/16" is enlarged to a band of ½" on the film. Hence seventy-two bands cover the 36" film, but as the movement is continuous there is a continual overlapping and the effect on the film, if the tubestand is moved steadily and smoothly, is that of an ordinary radiograph. Limiting the length of the slit in the mask to one inch covers the 14" width of the film without spraying the operator with primary rays, but it is, of course, advisable to wear an apron and gloves if

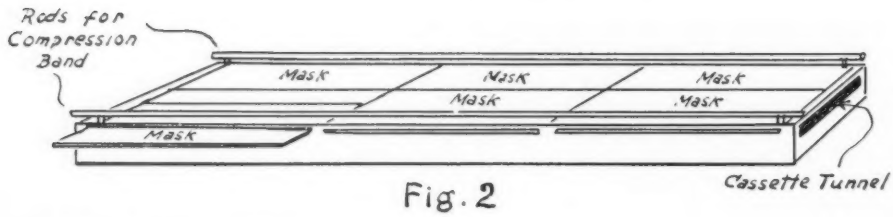


Fig. 2

much of this work is being done. The ideal method would be to have a motor-driven tubestand with a speed which could be varied so as to give a longer exposure to the femora than to the tibiae. The slit method is faster than the three-exposure method and also subjects the patient to less radiation. It also involves less special equipment. Using the three-film-mask method the exposure at 6 feet is 1/7 sec., 150 ma., and the kv. varies from ankles 45, knees 47, hips 51 for a five year old to ankles 49, knees 53, hips 57 for a teen age child. With the moving tube and slit mask method the ma. is 150, the kv. about 50 and the time of tube travel 5 seconds.

It is not claimed that this method is micrometrically accurate but it is more accurate than clinical measurements and, as already demonstrated, far more accurate than a single teleradiograph. According to Green, Wyatt and Anderson the error in an orthoroentgenogram of an adult femur is .2 cms., and the orthoroentgenogram measurement of the tibia is the same as that of the actual specimen. The

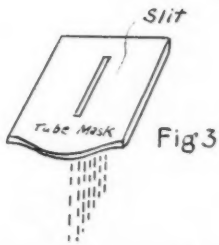


Fig 3

.2 cms. represents a shortening in the orthoroentgenogram and is due to the fact that the femur does not lie quite parallel to the film.

I am indebted to Dr. J. D. Munn, Radiologist to the Hospital for Sick Children, Toronto, for assistance in compiling this paper and for permision to publish it.

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Sectional Radiography

By REGINALD POTTS, R.T.
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ONE of our biggest headaches in radiography is super-imposition of tissue structure. Sectional Radiography or Planigraphy is a means of selecting a certain plane or layer and blurring out surrounding tissue structure, giving much better detail sharpness of layer or plane selected.

It is well known that movement of the x-ray tube, patient or film causes lack of detail sharpness in the conventional radiograph, consequently the more movement the greater loss of detail, conversely the less movement the better detail sharpness; these facts form the basis on which our planigraph works.

The x-ray tube and Bucky are interlocked by means of an arm which is made to pivot at a certain fulcrum point, the tube being centred to the Bucky at all times. The tube and Bucky are set in motion by means of a mechanism attached in unison with our x-ray control. When the tube is furthest to the right and is ready to start on its complete swing our energy then cuts in; as the tube moves to the left the Bucky moves to the right and vice-versa.

In analyzing these statements regarding the effect of motion on detail sharpness it is obvious that with the x-ray tube and Bucky in motion all detail sharpness will be lost, except at the fulcrum point where in theory there is no movement at all. Thus detail sharpness at the fulcrum point will remain comparatively good but is reduced above and below the fulcrum point.

The thickness of the so-called plane or layer can be controlled by several methods:

(1) Length of tube travel. At a given film distance the longer the tube travel the thinner the layer will be, in which visibility of structure will be satisfactory.

(2) Length of focal film distance. The shorter the focal film distance at a given tube travel distance, the thinner the layer will be in which visibility of structure will be satisfactory.

Now let us deal with technique and positioning of our patient in planigraphy. As our tube is in motion there is a greater mass of structure to be penetrated than in regular radiography, consequently technique factors will be somewhat higher, also lower milliamperage must be used as the time for the tube and Bucky travel must be taken into consideration. In some cases this is an advantage as it enables us to use the small focal spot. I will deal more specifically later with technique factors used on individual examinations.

In positioning our patient for planigraphy we need not worry about superimposition of structures, consequently there is no tilting of tube, patient, etc., as in regular radiography, except in some cases such as a sternum where, because of the greater opacity of the dorsal spine it would take so much energy to penetrate this area that our sternum would not be visible.

To overcome this difficulty we position the patient so that the tube travel will be passing across the area of greater opacity

* Presented at the Sixth Annual Conventoin C.S.R.T., Quebec, June, 1914.

and not directly over it, consequently the rays are not required to penetrate this area during the entire exposure.

I would like now to demonstrate some examinations taken by this means in our department and give you some idea of technique and positioning.

Tempero-Mandibular Joint and Mandible:

We all know it is very difficult to obtain a diagnostic film of this area with the conventional radiograph. With the planigraph a very good film is obtained by placing the patient on the table in the usual position for taking a true lateral of the skull. A towel or some other non-opaque article about 1" thick is put under the head and the patient is positioned as for true lateral skull. Exposures are taken at 2, 3 and 4 cm. thicknesses, technique used being 30 milliamperes, 34" distance, 60 K.V.P. at 3 sec., amplitude 14. 8 x 10 par-speed screens.

Sternum:

As I mentioned before because of the greater opacity of the dorsal spine we must direct our ray across the spine and not directly over it. Our patient is asked to stand at the side of the table facing the tube and is asked to bend forward. We centre the sternum to the Bucky. The tube movement is up and down the table, consequently we are passing across the dorsal spine and not directly over it. Exposures are taken at 3, 4 and 5 cm. thicknesses. Technique factors used are 20 M.A. at 3 seconds, 65 K.V.P., 34" distance, 10 x 12 par-speed screens, amplitude 14.

Sterno-Clavicular Joints:

The patient is placed on the table in the prone position with his arms at his side. The sterno-clavicular joints are centred directly over the Bucky. Exposures are taken at 3, 4, 5 and 6 cm. thicknesses. 10 x 12 par-speed screens. Technique factors used are 20 M.A. at 2½ seconds. 60 K.V.P. 34" distance. Amplitude 14.

Chest:

The patient is placed on the table in the supine position. The suspicious area is centred over the Bucky, 8 x 10 or 10 x 12 film may be used according to the size of the area in question. A scout film is taken at a 3 cm. thickness and developed to be certain of technique and positioning. Exposures are then made from 2 to 15 centimetre thicknesses. All exposures are taken on full inspiration. Technique factors used are 12 M.A. at 2½ seconds. 55 to 60 K.V.P. 34" distance. Amplitude 14.

I did not mention before that x-ray timer, planigraph timer and Bucky timer are all set at required time. Also markers are placed to denote thickness at which exposure was taken.

oublier qu'avec l'encombrement du travail de la plupart de nos services radiologiques et les nombreuses demandes d'examens fluoroscopiques, les médecins ne peuvent suffire à la besogne. De ces quelques considérations, une obligation s'impose à nous: celle de travailler avec ardeur à perfectionner chaque jour nos techniques en Rayons X, en vue de rendre le meilleur service au malade lui-même et d'apporter une collaboration toujours plus grande à nos radiologues.

A ce sujet, ne devons-nous pas grandement nous réjouir de faire partie de la Société des Techniciens en Rayons X, de cette Association où "sont mis en commun, avec les soucis professionnels, les joies de l'action bienfaisante"? Sachons donc profiter des nombreux moyens qu'elle met à notre portée, afin d'augmenter notre valeur technique et "d'acquérir tout le savoir dont nos malades pourraient avoir besoin." Oui, en toute simplicité, aimons à communiquer aux autres le fruit de notre expérience! Que peut-il y avoir de meilleur pour notre formation professionnelle que de "limer ainsi notre cervelle contre celle d'autrui," selon l'expression bien connue de Montaigne? Puissions-nous le faire souvent, et devenir ainsi de plus en plus et de mieux en mieux ce que nous nous proposons d'être: des techniciens, des techniciennes **idéals!**

Mais pour réaliser pleinement le but que nous poursuivons, il nous faut sérieusement vouloir avancer chaque jour; convaincus qu'à l'instant où l'on cesse de monter, hélas! on commence à descendre!

N'est-il pas vrai que dans ce terrible recommencement quotidien, nous avons constamment besoin d'avoir à l'esprit la pensée d'un noble idéal à atteindre et cela, quoi qu'il en coûte et bien qu'il en coûte. *Mais cet idéal, quel est-il donc?*

Pour répondre à cette question, nous n'avons pas cru mieux faire que d'emprunter les paroles si pleines de sens de l'illustre Pasteur, paroles qu'il prononça lors de sa réception à l'Académie française: "La grandeur des actions humaines, dit-il, se mesure à l'inspiration qui les fait naître. Heureux qui porte en soi un idéal de beauté et qui lui obéit: idéal de l'art, idéal de la science, idéal de la patrie, idéal des beautés de l'Evangile! Ce sont là des sources de grandes actions et de grandes pensées. Toutes s'éclairent des reflets de l'Infini." S'adressant un jour à une assemblée d'étudiants, il disait encore ceci: "Mes amis, quelle que soit la carrière que vous embrassez, proposez-vous un but élevé." Non, nous n'avons pas le droit d'être satisfaits d'une honnête médiocrité et de nous y complaire!

"Heureux, disait Henri Bordeaux, ceux qui ont placé très haut le rêve de leur vie!"

En faut-il davantage pour nous convaincre de l'opportunité d'avoir nous aussi de l'idéal? . . .

Quelques réflexions sur les bienfaits de l'idéal, nous seront peut-être utiles pour stimuler notre ardeur à le poursuivre sans trêve. Disons d'abord avec Riboulet que l'"idéal est principe d'ordre. En effet, les pensées les plus nobles jaillissent d'un coeur profondément épris du bien et du beau. L'idéal est aussi une lumière et une force, puisqu'il donne un but à la vie, condition première pour qu'elle soit bien employée." Enfin — c'est encore Riboulet qui parle — "l'idéal est le bienfait de la vie et la source d'une grande joie, car il consacre l'être tout entier au service du bien, fait fructifier les talents et les dispositions naturelles, développe les qualités intellectuelles et les vertus morales."

Cependant, s'il est certain que l'idéal est nécessaire et présente de nombreux avantages dans l'orientation de toute vie

humaine, un enthousiasme vibrant est aussi d'un grand secours pour en assurer la réalisation, car rien de grand, ne s'est jamais accompli sans enthousiasme "Tout peut se faire avec lui: c'est un levier qui peut soulever la monde. Nous nous demandons comment un succès a été obtenu, comment un travail important a été réalisé? Réponse une volonté tenace, chauffées au feu de l'enthousiasme, a présidé à l'oeuvre." [1]

Et nous en arrivons à la dernière partie de cette causerie, à savoir quelles sont les qualités requises pour faire de l'idéal que nous rêvons, une réalité vivante.

Avant d'aller plus loin, il serait peut-être bon que nous fassions ressortir encore davantage, *l'importance pour le technicien. la technicienne en Rayons X, d'être amis du progrès.* Nous appliquer à bien connaître et comprendre nos appareils et les accessoires, saisir les occasions d'en voir des modèles différents, chercher le comment et le pourquoi des phénomènes, apprécier les résultats, les statistiques, l'utilité du service dans l'hôpital, savoir en parler et en écrire pertinemment: voilà autant de points qui doivent susciter et captiver notre intérêt. C'est dire que nous ne devons pas mettre de côté livres et revues, le jour de notre dernier examen. Au contraire, c'est pour nous un impérieux devoir de continuer à étudier, afin de nous perfectionner, de nous tenir au courant des théories nouvelles, des découvertes récentes et des méthodes qui, conséquemment, en découlent. Le souci d'une *compétence professionnelle* toujours croissante doit être nôtre, puisque, comme le disait Pie XI, "nous sommes appelés à vivre à une époque où il n'y a pas de possibilité d'être médiocres."

Mais ce n'est pas tout de savoir théoriquement; il nous faut dans l'exécution être capables d'appliquer les connaissances acquises. La vie exige de nous une activité constante. Or, dans ce travail de perfectionnement, il importe beaucoup de croire de prime abord, qu'il y a matière à le faire. Celui qui pense tout savoir, tout avoir, ne voit pas l'utilité d'acquèrir. Beaucoup de personnes se rendent compte de leurs lacunes, mais dans la pratique, elles en prennent leur parti.

Si nous observons tant soit peu ce qui se passe dans un département de Rayons X, très vite, nous nous apercevons qu'outre la compétence professionnelle obligatoire, il faut à ceux qui se dévouent dans ce domaine, tout un ensemble de qualités et d'aptitudes, sans lesquelles ils ne sauraient remplir leur mission de façon adéquate. Puisque la journée d'un technicien, d'une technicienne, est une succession de multiples détails, qui tous ont leur importance, il en résulte que la patience, la minutie, le goût des petites besognes manuelles, un grand esprit d'initiative et un sens d'observation aiguisé, sont autant de qualités que nous sommes appelés à cultiver et à développer en chacun de nous.

En premier lieu, la patience est nécessaire. Pourquoi cela? Parce que pour obtenir une image radiographique qui soit parfaite au point de vue technique, il nous faut assez souvent, surtout au début de notre entraînement, recommencer l'opération plus d'une fois. Mais si cette vertu ne nous fait pas défaut, les échecs ne nous feront nullement peur.

A ce propos, René Bazin disait que "le premier échec est nécessaire, car il exerce la volonté. Le second peut être utile. Si vous vous relevez du troisième, ajoute-t-il, vous êtes comme le raisin qui n'est jamais si bon que lorsqu'il mûrit sur les cailloux." Ce qui est fort encourageant, n'est-ce pas? Enfin, rappelons que si nous voulons vraiment réussir, il nous faut encore avoir cette *"piété de l'ouvrage bien fait"* dont

parle Péguy. Voilà, semble-t-il, quelques qualités intellectuelles susceptibles d'assurer le succès dans l'exercice de la profession.

Nous ne devons guère oublier néanmoins, que les qualités de l'esprit, seules, ne sauraient suffire. Il faut y joindre les qualités morales et sociales, car c'est la vertu, non le savoir, qui fait la valeur de l'homme!

"Science sans conscience, dit Rabelais, n'est que ruine de l'âme."

Parmi ces vertus qui doivent être notre apanage, l'esprit de collaboration et la modestie à l'endroit des radiologistes, la discrétion et le secret professionnel auprès des clients, la cordialité à l'égard des personnes avec qui nous venons en contact, la bonté et la douceur à l'égard de tous contribueront à faire de nous des sujets d'élites dans notre sphère d'action.

Et d'abord, l'esprit de collaboration et la modestie à l'endroit des médecins . . . Nos radiologistes ont certainement droit à une collaboration compréhensive et empressée de notre part, à raison de tout ce qu'ils ont fait pour diriger notre travail de formation professionnelle! En retour, exerçons-nous à saisir leurs méthodes, leurs techniques préférées. Ainsi, pourrons-nous plus facilement travailler dans le même esprit qu'eux, ce qui ne manquera pas de donner de la cohésion et une grande unité dans le service. Quelle que soit notre habileté dans les différentes techniques, sachons toujours rester à notre place, car ce n'est que le jour où nous aurons compris qu'à côte de la tâche du radiologiste, il y a place pour une collaboration qui la complète, que nous deviendrons personnellement des professionnels.

Discrétion et secret professionel.—Dire de quelqu'un qu'il est un tombeau, est faire de lui le plus bel éloge. On ne se répent jamais d'avoir respecté le secret, tandis qu'au contraire, on regrette souvent de l'avoir transgressé. Sans doute, nous apprenons beaucoup de choses au département de radiologie, concernant le malade; mais ce que nous apprenons ainsi dans l'exercice de notre emploi, ne nous appartient pas . . . comment pourions-nous en faire usage? Aussi, notre discrétion doit-elle consister dans le silence, véritable force intérieure qui nous rendra capables de ne livrer aucun secret.

Cordialité.—Encore une autre qualité non moins indispensable, puisque de par nos fonctions, nous sommes en relation avec différentes catégories de personnes. Cette disposition intérieure revêt une telle importance, qu'a bon droit, on l'a comparée à "l'huile qui facilite le fonctionnement des rouages d'un établissement, d'une collectivité."

Enfin, bonté et douceur à l'égard de tous.—Lacordaire disait, parlant de la bonté, que "c'est cette vertu qui fait le plus de bien aux hommes et que pour l'être assez, il ne faut pas craindre de l'être trop!" Le malade, lorsqu'il se présente au département des Rayons X, est souvent craintif et inquiet. . Il faut au besoin le rassurer, et prendre le temps de lui expliquer ce qu'il devra faire ou ne pas faire, au moment de l'exposition radiographique. Souvent, de grands blessés ne peuvent se plier aux exigences de notre technique, qu'au prix de grandes souffrances. C'est à ce moment que le technicien ou la technicienne doit faire appel à son esprit d'initiative et de douceur, pour ne pas augmenter par défaut de précautions, la douleur des souffrants. C'est le temps de faire preuve d'une bonté vraiment sympathique et envers le malade et envers ceux qui l'accompagnent. Que de rayons d'espoir, un bon mot, un sourire bienveillant, ne peuvent-ils pas faire naître, dans de pauvres coeurs torturés par la maladie ou l'angoisse.

Terminons cette esquisse des qualités que requiert l'accomplissement de notre labeur quotidien, en rappelant ce mot de Pasteur: "C'est l'homme qui honore sa position, dit-il, et non la position qui honore l'homme".

A l'oeuvre donc! Dans un effort commun, prenons tous les moyens pouvant nous acheminer vers notre but, persuadés que le succès vient toujours à qui sait attendre et s'aider! Notre union sera notre force! S'il est vrai de dire que l'union vit d'entraide, il n'en est pas moins vrai que l'entraide est un mutuel service et "servir, c'est unir," a écrit le Père Charmot.

Nous sommes au service de la science et des bonnes moeurs. *"SCIENTIA ET MORES,"* proclame la devise de notre Association. Noblesse oblige.

(1) PAUCHET (Dr Victor) "De l'enthousiasme" (dans) Réagir, les éditions Oliven Paris, no 1, Janvier 1934, p. 7.

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Book Review

RADIOLOGY PHYSICS, John Kellock Robertson, F.R.S.C. Published by D. Van Nostrand Co. $5.00.

Here is a standard textbook on x-ray and radiation physics which will serve the student in his training period and remain as an invaluable book of reference for his maturer years. Written in an understandable style by the Professor of Physics at Queen's University, Kingston, Ont., it has been accepted as a standard authoritative work for both radiologists and radiographers throughout the United States and Canada since its first publication in 1941. The extent of this acceptance is indicated by the fact that it is now in its fifth printing.

Profusely illustrated, the book starts with the physics of alternating current, leading on to the production of high voltage and its control and measurement. Cathode rays and structure of the atom are then dealt with, followed by a description of x-ray tubes and valves with their functions. Two chapters deal with the properties of x-rays and their measurement. The nature of secondary radiation, x-ray dosage and radioactivity are studied comprehensively and the work concludes with the consideration of supervoltage tubes and artifical radioactivity.

While this book deals with highly technical material it is written for students and they will find that the subject is handled in a manner which renders it understandable and assimilable. L.J.C.

X-Ray Practice in Tuberculosis

By LEONARD A. LUDWIG, R.T.
Vancouver, B.C.

THE purpose of Tuberculosis Control is to war against this specific disease; to lessen its considerable toll among our population, using every means available to modern medical science to efficiently and positively bring about a victorious conclusion.

It is a war in which we, as citizens, must be the agressors and in which the x-ray technician plays a major part. The importance of x-ray in the fight against tuberculosis cannot be overemphasized.

The organization of tuberculosis control, in order to conduct the fight efficiently, is a complicated and precise setup involving a considerable personnel. These workers include doctors, nurses, x-ray technicians, laboratory technicians, educationalists, organizers, social service workers, a rehabilitation officer and a host of auxiliary help such as that required to keep accurate records and for administration.

The fight is conducted in four stages. The first stage is to search out the T.B. cases among the population. This is called "case finding," and often involves the conveyance of x-ray services to the people where it is impracticable to get the people to the x-ray. The second stage is to provide modern and proved treatment, which includes isolation where indicated.

The third stage is that of education, which is directed at both positive T.B. cases and the public in general. Lastly, the rehabilitation officer steps to the front to provide invaluable services in placing back men and women as an integral part of the community.

In all the above, the public must understand the necessity of full co-operation, both in personal presentation for case finding x-ray and in dollar sacrifice for financing.

As the x-ray is the only means of any consequence to early T.B. diagnosis (there is definitely no alternative), experiments were made in the 1930's with mass chest radiography of sections of the population, to determine the feasability of extending the practice to the entire population. With the then existing comparatively rudimentary apparatus and methods, it was found impractical due to unreasonably high cost of the 14 x 17 film employed, as well as filing and storage difficulties. Paper film (14 x 17) was also experimented with but found to have definite disadvantages in handling and storage. So it was not until the technical difficulties of using low cost miniature films for mass radiography were overcome, that strides were made in this field.

Recent years have witnessed the development to marvelous perfection of photofluorographic units which make it possible to x-ray a large proportion of our population at small cost per capita. These units are designed to take chest x-ray pictures in 35mm., 70mm., and 4 x 5 inch sizes.

Each of these sizes has advantages and disadvantages, depending on finances available, proportion of population to be x-rayed, quality of finished films desired, etc. The British appear to be favoring mass miniature radiography with 35mm. roll film, while we on this continent, have leaned toward the use of 4 x 5 inch cut film with its greater cost but higher quality results. The latest trend may be toward a compromise, using 70mm. roll

film which has the advantage of ease in handling while not making too great a sacrifice in quality. As is now well known, the photofluorographic unit is designed to photograph the chest image, using the light from a specially prepared fluoroscopic screen. The camera assembly with its built-in F-1.5 lens (or faster) is mounted in a light-tight hood so that the only light which can reach the film is that of the image on the fluoroscopic screen, through the camera lens. A lead glass is placed on the camera side of the fluoroscopic screen to absorb any remaining x-radiation and thus prevent fogging of the film.

The doctor makes no attempt to diagnose from the miniature film, but if any suspicious markings are seen, the patient is recalled to have a full sixe 14 x 17 diagnostic film made. As only a small percentage is recalled, this method results in a huge saving in cost of film alone, not to mention the problems of filing and storage space which are thus neatly solved.

Special types of x-ray pictures are available to the surgeon as an aid in localizing and determining the size of the cavity or cavities, should they be suspected.

Among these are: P.A. at expiration, light and dark, tomograph and double diaphragm (after phrenic crush). Regional films with adapted technique factors for the ultimate in contrast and definition, may be taken. Lipiodol injection bronchograms are not without a valuable part in the program while fluoroscopy of artificial pneumothorax patients is a routine. Also the Bucky or Lysholm grid may be used and the tube made be tilted from the 90° in order that the desired view for any specific case may be obtained. Of course, stereos, laterals and obliques are much used in addition to these others, at inspiration or expiration, depending on the requisition of the doctor.

P.A. Expiration:

This is often used after artificial pneumothorax (air injection into pleural cavity) to determine extent of pleural adhesions.

Light and Dark:

This method is used in thoracoplasty cases (where several ribs have been removed to promote lung collapse). Two films are made, the "light" is actually a normally exposed film to demonstrate the condition of the non-operative side. The "dark" is given 6-10 K.V. additional penetration over normal, which is required by the increased density of the collapsed lung. A single film can also be made to serve the purpose, by placing a sheet of lead to cover alternate vertical halves of the cassette. Or again, a single exposure and a single film will suffice where a 2-4 mm. aluminum filter is placed vertically on that half of the cassette at which the film would otherwise be overexposed.

Tomography:

These "sectional" films are being requisitioned for increasing numbers of cases. A system which is found to be most practical, is a four film technique, using sizes 6½ x 8½, 8 x 10, or 10 x 12 inches, depending on the area to be included. The fulcrum is moved 1½ centimeters for each film, starting at 1½ cm. posterior to the middle and "planing" anteriorly for the remaining three films. As most cavities are found in the anterior portion of the chest, this generally "sections" the diseased area sufficiently. However, the patient is kept as comfortably as possible on the table in position, while the films are developed. If a cavity is seen still

"in focus" on the first or fourth films, planing is carried further for one or more pictures, either posterior or anterior as indicated, till "out of focus" proof that planing has passed the extremes of the cavity or cavities, is obtained.

Double Diaphragm:

Where the phrenic nerve has been severed or crushed, the surgeon finds it desirable to check the effect of paralysis to the involved diaphragm. This is usually done with the fluorscope, but as it leaves no permanent record for accurate checking with future conditions, the double exposure method of demonstrating diaphragmatic excursion is occasionally found useful. The technique is as follows: on the same film, make two exposures, the first on expiration with 6 K.V. increase over normal, the second on inspiration with 4 K.V. decrease from normal. Thus, there is a 10 K.V. difference between the two exposures. Great care must be taken that the patient understands and actually co-operates in exhaling and inhaling to the fullest extent. The finished film shows the diaphragm in two positions, with much less movement indicated on the affected side.

The excursions of the right and left diaphragms are in opposition to each other (in cases of successful phrenic crush) the movement being described as "paradoxical." The abdominal contents, when subjected to unequal pressure from above, will follow the course of least resistance, thus obeying the laws of physics in true fashion. When the affected diaphragm offers no resistance while its opposite causes downward pressure, the abdominal organs tend to push the non-resisting diaphragm up while the other, at inhalation, contracts downward.

The results of the war against tuberculosis thus far have been gratifying enough to warrant the belief that the program expanded will reduce the incidence of this disease to a level comparative to that which smallpox now shows.

We as x-ray technicians, must use every skill and device at our disposal to add to the value of the already valuable part which we play in the fight.

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LAB. TECHNOLOGISTS' CONVENTION, MAY 20-21

The Thirteenth Annual Convention of the Canadian Society of Laboratory Technologists will take place at the Chateau Laurier in Ottawa, Ontario, on May 20th and May 21st, 1949. An invitation is extended to all those interested in attending. For further information please write: Miss Isabelle Mailhiot, 271 Besserer Street, Ottawa, Ont.

Profile of the Ideal X-Ray Technician

By SISTER D'AVIGNON, M.E., R.T.
St. Boniface Hospital, St. Boniface, Man.

IF I venture to-day to describe to you the portrait of the ideal technician, it is not that I bring you new knowledge. The subject is a familiar one, in fact it is very frequently discussed. I consider it as of the utmost importance and because of our great need for ideal x-ray technicians, I wish to make this subject the topic of my paper.

In beginning a discussion such as this, I find myself confronted with a problem which is not an easy one to solve. It revolves around this point: Which are the most important qualifications that one hopes to find in an ideal x-ray technician?

The following qualifications to me are by far the most important, and all technicians should aim to possess them. They are:

1. Sound knowledge of her duties.
2. Competency.
3. Great sense of responsibility in the discharge of her duties.
4. Co-operation.
5. Professional attitude toward x-ray personnel and hospital staff.
6. Kindness and sympathy toward her patient.
7. Discretion.

I shall now enlarge on each one of these.

1. Sound Knowledge of Her Duties:

One cannot imagine a person discharging important duties such as those required of an x-ray technician without having first of all received a sound basic knowledge of the principles of physics; secondly, having satisfactorily followed the course of training in an approved School of X-Ray Technologists and, thirdly, having successfully passed the examinations set by the Board of Examiners, Such a candidate is then prepared for the practice of her profession under proper guidance and close supervision. The latter is most important for her future success as a technician. An experienced person will provide her with guidance, encouragement and help develop good judgment. The good technician constantly strives to increase this basic knowledge which she possesses and this is made possible for her by the attendance at special refresher courses, going to conventions, taking an active part in discussions and reading professional literature in her field. All of these will prepare her to make valuable and worthy contributions to her profession in later years.

2. Competence.

Success in life is not made possible simply through the acquisition of knowledge. What is still more important is the ability to utilize such knowledge to the greatest advantage of others; this is competency. This is achieved through the daily application to one's work, a keen sense of observation at all times, and a disposition which makes one ready to consult better informed persons or scientific books in the discharge of certain duties where she may find herself hesitant or inexperienced. It is also what will gain for her the confidence of others, the satisfaction of seeing them contented and the assurance that the patient is given what is considered the best of care. This

can be acquired through years of experience but one may develop it within a relatively short time if one has sufficient ambition.

3. Great Sense of Responsibility in the Discharge of Her Duties:

The nursing profession calls for mature minds due to the seriousness of work. We can ask no less of an x-ray technician to whom life and death is confided in a similar way. Being aware of the serious consequences that may follow her work, the ideal technician will never attempt anything of which she is not absolutely sure and in case of doubt, she will always discuss the problem with the Radiologist, or in his absence, the technical supervisor. If because of her faulty work the patient suffers, she will bring discredit to herself and her hospital.

4. Co-operation:

In all spheres of life where groups of people are working together we hear of co-operation. It is perhaps the most important factor, since it is responsible for the good functioning and the harmonious understanding of groups of people working toward a common goal, namely, the good of the patient. Co-operation for an x-ray technician implies good relationship between members of the x-ray staff, the medical staff, the ward personnel, the patient in and outside the hospital. The technician is called upon to develop this fine quality of co-operation to an expert degree due to the nature of her work. The fruits of perfect harmony are satisfaction, advancement, progress and happiness in her work. One can really say that the amount of work accomplished and its fine quality is dependent upon the co-operation of its working members. There is no room for petty jealousies and bickering in an x-ray department.

5. Professional Attitude Toward X-ray Personnel and Hospital Staff:

The performance of professional work calls for persons who show by their manner, speech, and deportment the characteristics of their profession. For the ideal x-ray technician we do not wish for less than courteous and pleasing personality, always in readiness to help others and discharging her duties with intelligence and seriousness which reflect maturity of mentality and personality. The professional technician treats other members of the staff with great respect without affectation, with friendliness without familiarity. She is appreciated by all who deal with her and receives respect in return. The staff as a whole is proud to possess such a person in their midst, and hope that through her influence others may be urged to follow in her footsteps.

6. Kindness and Sympathy Towards Her Patient:

Sympathy has been defined as a fellow-feeling with others in their varied conditions of joy or grief. Frequently the technician finds herself facing suffering humanity and it is her duty to find means of helping it in every way. Having to deal many times with helpless patients, with the aged, with those who speak foreign languages and with the irritable child, the technician tries to be patient, kind and sympathetic to all. If duty imposes upon her the obligation of tiring her patient somewhat, she does it with minimal discomfort. She should look upon each patient as another self or person whom she esteems. A spiritual motivation remains constant with her in the fulfilment of her duties of kindness and sympathy and it is the thought of serving Christ Himself in the service of each and every one of His suffering members. This thought lightens

the burdens of her duties and fills her heart with serenity and great joy.

7. Discretion:

"The valiant woman opens her lips to wisdom and the law of clemency is on her tongue." Book of Wisdom.

The respect which one owes the living sanctuary of suffering humanity calls for a calm, discreet person. This respect will best manifest itself by a zone of silence with which she surrounds her patient. This becomes a source of reassurance for the individual for he is in greater need of calm than distraction. From the technician's point of view, silence gives her work a serious and conscientious character, and enables her to make the greatest use of her ability. Discretion will also help the considerate technician keep undisclosed any information obtained through her work as a professional person.

In conclusion, may I suggest that the most important of these is a sense of responsibility in the discharge of one's duties. I say this because if one has this qualification she will be inclined by her nature to develop the others. In other words if we have the desire to do a good job, we will use every means to accomplish this end.

Results of November, 1948, Exams., C.S.R.T.

Successful Candidates Eligible For Registration

ALBERTA

Ivy Frederickson
Helen McCuaig
Charlotte E. Sande
Eileen R. Shortt
Muriel L. Starratt

BRITISH COLUMBIA

John C. Blanchflower
Henry Boldt
Mary-Margaret Brown
Peter C. Bryden
Shirley M. Cameron
Margaret T. Cavin
Joyce Hatt-Cook
Barbara A. Simpson
J. Geoffrey Smith
Derrald L. Thompson
Mary E. Turner

MANITOBA

Therese Dunand
Janet Rose Hyde
Patricia M. Lavallee
Helen A. Meagher
Cornelius J. Petkau
Robert J. Richardson
Jeanne Sagan
Wilhelmina Stewart
Edward J. Thompson

NEW BRUNSWICK

Edith Brodersen
Eva May Currie
Ernestine Feetham
Marilyn Bernice Henderson
John David McLauchlan
Naida E. Mulhern

NOVA SCOTIA

Sister Frances Grace
Katherine Rosalie Kiggins
Myrtle Catherine Miller
Kathleen Sarah O'Connell

ONTARIO

Greta Brown
Arnold Daley
Pearl Dixon
Catherine Ferraro
Frances Garnett
Kenneth Hall
Catherine Jamieson
Sister Joseph du Redempteur
Catherine Mundy

QUEBEC

Antoine Couillard-Despres
Joan M. Griffith
Cecille Leclerc
Sister Miriam of Sacret Heart
Norma Stewart

SASKATCHEWAN

Ivy Cowan
Alpha Gayton
Jean Nowsad

The Handling of Accident Cases

REV. SISTER JOHN OF THE CROSS, R.T.
St. Joseph's Hospital, Glace Bay, N.S.

ONE of the greatest difficulties in the field of radiolgraphy is, to my mind, the handling of accident cases. This problem presents a definite challenge to the ingenunity and intelligence of a technician.

Let us consider some of the implications to our problem. There are three types of accident cases:

(1) The patient who is suffering great discomfort from an injury.

(2) The semi-conscious patient.

(3) The patient in deep coma.

We shall confine ourselves to the first because this is the type of accident we have to deal with most frequently, especially in our industrial area in Cape Breton.

I think you all will agree when I say we cannot lay down any hard and fast rules on how to handle accident cases. Each one presents a problem in itself. To-day we have a very co-operative patient with a serious fracture and to-morrow we have a very non-co-operative patient with nothing more than a greenstick fracture or bruise. Notwithstanding the patient's condition or any other unpleasant circumstances we, as technicians, have as our primary aim, the making of a diagnostic radiograph. In most cases it is unfortunate but necessary that the injured part be as close to the film as possible, thus adding to the patient's discomfort. If we have an understanding with the patient before we start working, telling him it will be necessary to have the limb or affected part in such a position and any other instructions we have to give, our problem will be half solved. Never tell a patient you will not hurt him if you know you cannot avoid it. Impress upon him the fact that some discomfort will have to be endured but that you will try to be as gentle as possible. By doing this you will find that 99% of your patients will be co-operative. Even children are easier to work with if they know we are being honest with them. Frequently preparing the patient psychologically takes a great deal of time but it is well worth the effort.

It is important that we work as quietly, quickly and in as well organized a manner as possible. We must do first things first and last things last. By that I mean the last thing we must do before making the exposure is to position the patient. How many of us could hold perfectly quiet without moving, while a technician positioned us, gave us instructions, adjusted the tube, then went into the darkroom and decided on type of film to use, came back and placed the film in the tray, searched for markers (which are always missing) and finally to the control stand and figured out a technique. This is a little too much to expect even for a well person, let alone the patient who is most uncomfortable and suffering acutely. This may seem far-fetched, but it is surprising the number of technicians who fail on this point. It is lack of thought and organization rather than lack of consideration.

We read in many articles this sentence —"The technician should insist upon the

* Presented at Eighth Refresher Course, N.S. & N.B. Societies, May, 1948.

presence of a doctor or interne while an accident case is being x-rayed." You will all (or most of you) admit that is an impossibility. Many of our hospitals have no internes and doctors are busy. Most cases can be handled very nicely by positioning the tube instead of moving the patient. In fractures of the spine and pelvis we make a practice of taking an A.P. scout film, developing it immediately before proceeding with any additional views. Although the interpretation of films is the radiologist's responsibility, I think every technician should be able to detect obvious fractures. In the event of a fracture, further moving or positioning of patient should be under medical supervision.

While we all endeavour to produce good films regardless of the circumstances, I believe our radiologists will agree that in fracture cases it is more desirable to produce a set of films showing the area in question and providing a diagnosis than to move the patient unnecessarily.

I shall not go into detail regarding the limitations of the mobile unit in accident work. For the extremities and thinner parts of the body it is quite satisfactory but for the skull, spine and heavier parts I find it almost a necessity to use the Bucky technique.

While we all have our difficulties with accident cases and we all admit it is an easier matter to talk about than handle them, I feel that our problems can be discused to our mutual benefit.

Cancer Spotter

Astronomy's Seeing-Eye Telescope used in New System like Chest X-Rays

Baltimore, Jan. 19 (AP).—Astronomy's seeing-eye telescope, the Schmidt Mirror, now has been trained on man and one of his mortal afflictions.

The Schmidt Mirror sees a wide area of the sky in a single photo, and this principle may make mass examinations for detection of stomach cancer possible.

Large-scale tests employing the device in a process called photofluorography are under way at the Johns Hopkins Hospital here under auspices of the United States public health service.

Physicians are hoping to approach what chest x-rays accomplish in the fight on tuberculosis.

The undertaking at Johns Hopkins is the first of its kind for stomach cancer. It is under direction of Doctors Robert Sloan, John Roach and Russell Morgan.

Mass examinations would be a vital factor in combating stomach cancer, they explain, because:

1. It is one of the least curable forms of cancer.

2. There are no really early symptoms. By the time sufferers feel ill enough to go to a doctor, it is often too late for the only treatment possible to-day—surgery.

In fact, about 95 per cent. of persons in this group are doomed, the physicians said. One in 800 persons in the United States over 40 years old has stomach cancer.

A main objective, therefore, is to increase the percentage of operable patients by achieving early diagnosis.

The Schmidt Mirror's function is to gather light and direct it onto a photographic film. What makes it so valuable in the cancer-testing unit is that it allows exposure time to be reduced; only one-twelfth of the radiation is needed to make the x-ray pictures as would be necessary were miniature chest x-ray equipment used for the stomach study.

This reduction is necessary because stomach cancer examinations require at least six exposures, which would make the process dangerous to patients if the usual amount of x-ray radiation were required.

Under the Hopkins system a radiologist can tell in a few minutes whether there is any sign of cancer.

In the first six months of the Hopkins project, 1,800 persons were examined. In that time 11 proved cancers were detected, the doctors reported.—*Toronto Globe & Mail.*

University of Rochester Demonstrates X-Ray Movies at Radiological Convention

Cut courtesy "Canadian Hospital," from G.E. print.

SAN FRANCISCO, CALIF., Dec. 6—New x-ray movie apparatus that is believed to hold great promise for clinical use in many fields, as well as for medical education, was demonstrated here to-day by members of the Department of Radiology of the University of Rochester School of Medicine and Dentistry, Rochester, N.Y.

The apparatus was described at the opening of the 34th annual meeting of the Radiological Society of North America by Drs. George H. Ramsey, James S. Watson, Jr., and John J. Thompson, and Mr. Frank Dreisinger* and Mr. Sydney Weinberg, all of whom collaborated in its development at the University of Rochester Medical School.

Up to now the effectiveness of cinefluorography (x-ray movies) has been handicapped by cumbersome equipment, slow lens and screen and unsatisfactory film emulsion. The Rochester equipment is believed to provide a practical tool of medical research and education.

High exposure to x-radiation required for the taking of movies has hitherto been too great to permit general use on patients, and the image obtained was not good enough to be of comparable value to regular radiography and fluoroscopy.

With the Rochester apparatus effort has been directed towards limiting the x-ray dosage received by the patient. Various techniques have been used to limit the amount of x-ray dosage to those levels commonly used in routine diagnostic x-ray procedures. This is accomplished by diaphragming the beam of x-ray to cover the part under study and by synchronization of the x-ray output with the camera movement so that the patient receives radiation only when the film is being exposed.

The equipment at Rochester had its origin in a 16 mm. unit assembled by engineers of the Eastman Kodak Company. Subsequently a change was made to 35 mm. apparatus, a type used more frequently outside the U.S. This equipment, by use of technical refinement and attention to detail, has produced films of high quality, Dr. Ramsey reports.

A room in the Department of Radiology at the University of Rochester Medical School has been set aside for routine diagnostic studies with cinefluorography. Up to the present 10,000 feet of negative film have been exposed in surveying the possibilities of use, concentrating on joint movements and swallowing.

"We feel that with the recent improvements made in cinefluorography we have a tool that will greatly extend the value of x-ray in medicine, affording a permanent record of rapidly moving body activities — something which the profession has long needed," Dr. Ramsey said. He outlined some of the advantages of the new cinefluorography equipment as follows:

It permits a more careful study of organs and skeletal structure in motion. Among the many applications are swallowing, joint motion,

* Visitors to the C.S.R.T. Convention at Quebec, in June, had the privilege of seeing some of these films demonstrated by Mr. Frank Dreisinger.—Ed.

as in arthritis, the movement of an x-ray opaque contrast medium through the arteries and veins, heart motion, obstructions in body passageways, fitting of prosthetic or artificial limbs, and the progress of physical therapy in restoring limb functions.

As an adjunct to medical education, it will permit the teaching of students or assistants in considerably less time. Few persons can view a fluoroscopic image at one time, but a considerable number can watch the same x-ray movies. The 16 mm. copies made by reduction printing from the 35 mm. negatives can be sent to other physicians for consultation, and educational x-ray movies can be circulated by medical libraries and universities.

The apparatus developed at the University of Rochester could be duplicated for general use, Dr. Ramsey said, since all the necessary component parts are commercially available. A Bausch & Lomb lens has been designed for this type of work and can be made on order. The x-ray generator and tube are conventional equipment.

The entire apparatus is mounted on a precision lathe bed for the purpose of maintaining rigidly, at all times, the exact relationship between camera and screen, thus permitting exposures in different locations without disturbing the focus. This is highly important where movement of a few 100ths of an inch can make a great difference in the clarity of the image.

The x-radiation leaves the tube, passes through the patient (but only when the film is in position to be exposed), and strikes a fluorescent screen from which it excites visible light. This light is then focused down to 35 mm. by the lens. (X-rays themselves cannot be focused.) The doctor or technician stands inside a nearby lead-lined room and observes the procedure through a window whose glass has been chemically combined with lead. An indicator shows when the camera is up to full speed so that exposure can be started.

The camera and screen assembly can be elevated to allow for patients of different heights and to take different areas of the body. For work on patients in a horizontal position, a right-angle mirror is used. A three-dimensional effect has been obtained in cinefluorography of limbs by coating them with bismuth trioxide ointment which produces a sharper outline of soft tissues.

Use of a fast f.85 lens especially constructed for this purpose, and of 35 mm. film rather than 16 mm. have been important factors in the success of the Rochester group's work. Better detail is obtained with the larger film, which can be worked over an optical printer without loss of quality. The larger film has about six times the area of the 16 mm. and has less graininess on projection.

A General Electric KX-1 transformer and control and a General Electric CRT 1-2 tube provide the source of the x-rays. A new Patterson E2 fluorescent screen has been used to create the image to be photographed.

For thick parts of the body which require high exposures, the camera is run slowly in synchronization with a lead shutter, and the action afterward slowed down and prolonged by optical printing. For less thick parts of the body, the camera is synchronized with a half-wave rectified tube at 60 frames per second. The latter method has been used before, most recently by Dr. Irving Rehman of the University of Southern California at Los Angeles. The slow motion is of great advantage in the study of rapid action such as swallowing, which takes place in a fraction of a second.

URGENT REMINDER RE RESOLUTIONS

Please note that resolutions for debate at the June Convention should be sent as soon as possible to the Chairman of the Resolutions Committee, Mr. Herbert M. Welch, Colonel Belcher Hospital, Calgary, as they have to be considered by the Resolutions Committee and then sent on to The Focal Spot in time for printing in the April issue.

Radiologists at Halifax C.A.R. Convention

Report on X-Ray Progress in Canada

By PERCY GHENT

From *Toronto Evening Telegram*, 18th January, 1949

Dr. James Brailsford, one of the founders of the British Radiological Society, thinks radiographic examinations are being carried too far, and objects to mass chest surveys by x-ray in particular. "If you feel fit and well, stay away from all doctors. Even in the case of cancer, nature will notify educated persons when to seek medical advice. Cheap mass examinations of those who have no symptoms are foolish. If a chest examination of someone who feels well shows a suggestion of something wrong, there is always a temptation to do something about it. Over 20% of the population has had some attack of tuberculosis and recovered without knowing it."

As reported in Time Magazine for January 10, thus sounded the dissenting voice of radiologist Brailsford in the ears of a group of Hollywood doctors, with more opinions along the same line. Radiologists of the United States were swift to refute these ideas as totally contrary to the best medical thinking in our day. Said Dr. Russell Morgan, director of the department of radiology at Johns Hopkins: "In the past six months radiographs of the stomachs of 3,000 patients (at the clinic) revealed cancers in four people who had no symptoms whatever." And Dr. Charles S. Cameron, medical director of the American Cancer Society, said that if a patient waits for symptoms of cancer, all too often it is too late for an operation. He would like to see still more mass examinations. Chest x-rays for all over 45 taken once or twice a year would cut the death rate from cancer of the lung by a considerable figure, he said.

LOCAL EXPERIENCE

Dr. A. C. Singleton, of Toronto, who is president of the Canadian Association of Radiologists, has just returned from the 12th mid-winter meeting of that body in Halifax. He was kind enough, at our request, to relate some of its highlights. We did not discuss the dissension of Dr. Brailsford, but significantly enough, the scientific paper delivered by Dr. Singleton at Halifax dealt with "numbers" of cases of bronchogenic carcinoma, which is primary cancer of lung, found during the study of thousands of chest radiographs taken in mass surveys. Such patients are immediately called back for further investigation by x-ray and other methods. That Dr. Singleton appreciates keenly the importance and humanity of this early diagnosis, calling for alertness in the highest degree in the interpretation of radiographs, is evidenced by the title of his paper: "The Radiologist's Responsibility in Bronchogenic Carcinoma." From the experience of this Toronto specialist it is clear that mass chest surveys are not only a vital factor toward the eventual conquest of tuberculosis, but have a definite function in the campaign against cancer.

SEEING THINGS THROUGH

Literally as well as metaphorically, "seeing things through" is the business of the radiologist. It is a business which demands maximum accuracy in its technical as well as its professional phases. For this reason the training of technicians, those lay workers who take the radiographs under the direction of radiologists, should be of the utmost thoroughness. Dr. A. E. Petrie, of Saint John, N.B., is a member of the examining board of the Canadian Society of Radiological Technicians. Addressing his fellow-specialists at Halifax, he asked them to make this training a matter of greater interest and concern; to do their utmost to elevate the standard of technical skill, for he felt that in Canada as elsewhere, the present standard was not high enough.

In obstetrics the value of radiology can hardly be over-stressed. It provides foreknowledge of the position of the foetus and measures precisely the dimensions of the pelvis; factors invaluable for the safety of mother and infant alike at the time of delivery. Dr. G. I. Norton of Montreal, and Dr. H. B. Atlee of Dalhousie University, both discussed this branch of the specialty and gave a heartening picture of its progress and application.

CURE FOR TINEA CAPITIS

We once read a medical description of an injury which sounded dreadfully grave and hopeless—but the learned terminology was applied to nothing more serious than a black eye. "Mass

* Presented at 8th N.S.-N.B. Convention, Halifax, May, 1948.

Epilation in Tinea Capitis" was the equally formidable way in which Dr. A. R. McGee, radiologist at the Toronto East General Hospital, titled his Halifax paper. In the language of the layman this means the x-ray treatment of ringworm of the scalp. There was an epidemic of this pesky pathology in a Toronto suburb recently. Dr. McGee himself treated more than 100 juvenile heads with the rays, and with 100% success. Another Toronto specialist, Dr. W. J. Cryderman, had a striking film demonstration concerned with the diagnosis of congenital abnoralities of the great blood vessels. Drs. C. B. Peirce, J. Kaufman and J. Bouchard, all of Montreal, combined to present their findings on the effects of irradiation on the blood, especially that of x-ray workers, and they stressed the value of periodic examinations. Radiology and its increasing value in veterinary science was the subject of a talk by Dr. A. E. Broome of Kitchener, and he displayed enlightening radiographs of chinchilla rabbits and other patients from the animal kingdom. Physicist Dr. S. Newsome of Dalhousie University described methods for the precise measurement of dosage in irradiation. Pantopaque myelography, a specialized technique for the discovery of spinal pathology, was treated in detail by Dr. D. L. McRae of Montreal; and the same radiologist discussed Blount's disease—the non-rachitic bowing of the legs.

Dr. J. G. Stapleton, Radiologist at the McGregor Clinic, Hamilton, Ontario, presented a very excellent paper on the subject of "Submucous Lipoma of the Colon." Included in this paper were a very concise statement regarding the cases of this nature already reported, plus discussion of the etiology, pathology and clinical findings of such. There followed a sound discussion of the signs to be found on roentgenological examination and the interpretation of these signs by way of the radiologist's diagnosis. Dr. Stapleton concluded his paper with the presentation of one case of this condition of which only 130 cases have been previously reported. The diagnosis was corroborated by pathological reports and subsequent operative reports. The progress report was also presented as being favourable.

HMCS "MAGNIFICENT"

But it wasn't all sober science and jaw-breaking terminology at the meeting. "How did Halifax welcome the radiologists from all across Canada?" we asked Dr. Singleton. "A royal welcome we'll never forget," he assured us. Wherever they went, to the splendid new Victoria Hospital, the Halifax Infirmary, the Camp Hill Hospital of D.V.A., both interest and hospitality were abounding. Dr. Singleton was especially impressed by an address by Dr. A. S. Walker, president of historic King's College. "Dealing in Shadows" was its appropriate title, and Russia and China were among the sombre shadows of current history he talked about. Guests of the captain and officers of the aircraft carrier HMCS Magnificent, the radiologists drank tea (this was emphasized) and inspected the gallant ship. One smiling young officer aboard was Lieut. Chassels, son of a well-known Toronto physician.

Yes, Halifax, celebrating the 200th anniversary of her founding this year, had a radiant welcome for the visitors.

COMING CONVENTIONS

May 20-21	Canadian Society of Laboratory Technologists, Chateau Laurier, Ottawa.
June 2-3-4	Ontario Society of Radiographers, Royal Connaught Hotel, Hamilton.
June 5-10	American Society of X-Ray Technicians, Fairmont Hotel, San Francisco.
June 13-17	Canadian Medical Association, Bessborough Hotel, Saskatoon.
July 3-4-5	Canadian Society of Radiological Technicians, Halifax, N.S.

continued from page 7

NEW BRUNSWICK SOCIETY OF X-RAY TECHNICIANS

Winter has come to the Maritimes, and an unusual one it seems, for here in New Brunswick, we had scarcely enough snow for a White Christmas—rather a surprising contrast—so many of our Upper Canadian and Western friends being snowed under. However, envy will get us nowhere, and a Winter Wonderland does offer such delightful enticements as skiing, skating and various outdoor sports.

IN THE WAY OF NEWS

The worm has turned—we find our popular Senior Technician from the General Hospital—Miss Evelyn Malm, herself a patient undergoing treatment. Do you still think patients should count their blessings, Ev.? Seriously, we wish you a speedy recovery.

We would like to say "hello" to Miss Naida Mulhern, formerly of the X-Ray Staff, Saint Joseph's Hospital, Saint John, and recently appointed to the staff of the County Memorial Hospital in Sussex, N.B. "Good Luck," Naida, we hope you like your new surroundings.

The stork paid a visit to the General Hospital and presented Mr. and Mrs. Stanley Bustin with a seven pound baby daughter. Mrs. Bustin, the former Miss Beatrice Main, was on Lancaster X-Ray Staff, and was the former sub-editor of this column. Congratulations, Bea and Stan.

Speaking of calls—Santa paid one to the home of a certain radiologist. Yes, he dropped a canary down his chimney. The canary has since proved a problem child—he absolutely refuses to take a bath. Anyone endowed with the wisdom of "Canary Physiology," please contact us that we may pass the information along to the baffled Medicine Man. (He refuses to have his name revealed.) While Mother Nature has snowed under you Westerners, Eastoners such as Kay Creelman from City Hospital, Moncton, seem to be caught in the drift of work. Kay, our C.S.R.T. Registrar, is really busy these days.

Our next meeting is being held at Lancaster Hospital, West Saint John, N.B., on Saturday evening, January 29th, 1949; we are looking forward to having all who possibly can attend.

And now, last but by no means least, we would wish all technicians, all Member Societies, and the C.S.R.T., a happy and prosperous New Year.

—LOIS I. McNAIR, R.T.,
Sub-Editor.

MANITOBA SOCIETY OF X-RAY TECHNICIANS

The November meeting of the Manitoba Society of X-ray Technicians was held in the Board Room of the Winnipeg General Hospital.

Membership fees were discussed. It was decided that the rate for first and second year students and those students who are working under the supervision of a non-certified Radiologist for their four year period, will all be classed as student members and charged on the basis of student rates. These rates will take effect January 1st, 1949.

Please note that The Focal Spot Distribution Manager is now Miss Margaret Kreitz, St. Boniface Hospital, St. Boniface, Man.

The appointment of three members, Mrs. J. L. Leybourne, Miss I. O. Spafford and Mr. A. McKenzie, was made to act as nominating committee to draw up a slate of officers for the 1949 executive. Election of officers will take place at our next monthly meeting.

We were then shown a very excellent and instructive film on the Radiography of the Lumbar Spine which was obtained from Christie Street D.V.A. Hospital, Toronto, and filmed under the supervision of Dr. Desmond Burke. The members are grateful to Mr. A. McKenzie for obtaining this film and to Mr. Doern for obtaining and operating the projection machine.

November 18th was a big evening for our Society in Winnipeg. We had a very enjoyable and pleasant time at a dinner and social held at the Empire Chateau. There was a splendid program convened by Mr. R. Gore with all the trimmings, for which we can thank our commercial firms. Members exchanged greetings and forgot the cares of the day for a few short hours.

—MRS. M. CARLSON,
Sub-Editor.

NOVA SCOTIA SOCIETY OF RADIOGRAPHERS

Happy New Year to all Canadian technicians and we extend a very cordial invitation to attend your C.S.R.T. Convention in Halifax this July. We must apologize for missing the October news-page, but your sub-editor, the executive and committees were concentrating so hard on the spade-work for the Convention that they forgot to talk about it. There have been five meetings held during the autumn. Convention plans have rather squeezed out any attempt at technical papers, but it will not continue so, now that much of the organization has been completed. With the enthusiastic help of the New Brunswick Society of X-ray Technicians, the finance program is going right along. The Halifax Bicentenary Committee is also co-operating; by this time you should have had some literature from them, along with a letter from our convention committee.

Early in October we said "Happy Landings" to Miss Sheila O'Toole, a recent graduate of Halifax Infirmary; she is now doing technical work in California under the direction of another Nova Scotian friend, Dr. Wallace M. Roy. Jean Fry, R.T., has also joined the group and we are hearing from them from time to time.

As this goes to press the Haligonian technicians are looking forward to meeting some of the distinguished members of the Canadian Asociation of Radiologists, who will be meeting here the first week of January . . . Welcome, Radiologists! What with their meeting and our meeting, this part of the world should be "x-ray conscious" by the end of 1949. Speaking again of our meeting: Have you a paper in mind? Have you a favorite technique? An ingenious gadget? Let us know about it as soon as possible.

Executive: It was with pleasure that we learned of the re-appointment of Dr. H. R. Corbett of Glace Bay as our Radiologist member from the Medical Society of Nova Scotia. Dr. Corbett has for many years shown keen interest in technicians as the many Cape Breton technicians whom he directs will affirm.

—ALBERT PERRY, R.T.,
Sub-Editor.

ONTARIO SOCIETY OF RADIOGRAPHERS

The Eastern Section of the Ontario Society of Radiographers held their semi-annual meeting at the Manitonna Hotel in Brockville, Saturday, November 13th, 1948, at 3 p.m., under the Chairmanship of Sister Mary Vincentia. Some forty-five members and guests were present. The guest speaker for the occasion was Dr. R. C. Burr, Director of the Ontario Cancer Foundation and Radiologist of Hotel-Dieu Hospital, Kingston. Dr. Burr gave a very interesting talk on "The Treatment of Cancer with X-Ray and Radium," illustrating his lecture with lantern slides. Miss Marguerite Bolster from Kingston General Hospital, spoke on "Therapy Treatment" and she also showed slides. Mr. George Ross of Sunnybrook Hospital, Toronto, presented an excellent paper and views of "The Tempero-Mandibular Joint." Mr. L. Stanisuzki, also from Sunnybrook Hospital, showed films on the cervical spine. Miss Margaret Bartram of Sunnybrook Hospital, delivered an address on "The Hip Joints," using a living model to illustrate her interesting talk. The final speaker was Mr. Kenneth Hall of Ottawa Civic Hospital, who spoke on "The Fundamental Principles of X-Ray Therapy." All the papers were well presented and most instructive. At the conclusion there was a general get-together, and refreshments were served. The next meeting was planned to take place again in Brockville. Miss Marguerite Bolster was nominated chairman for the next year.

It is with regret that we announce the resignation of Mr. Alex. Neland as President of the Ontario Society of Radiographers. It is most unfortunate that circumstances have prevented him from carrying out a job for which we know he was well qualified. Our new President is Mr. John Collins of St. Catharines who has already proven himself a conscientious and diligent worker for the Society. Mr. Collins and his brothers and sisters took high roads and low roads home to Scotland this Christmas for

a family reunion. We wish John a safe journey back to Canada.

Central and Western Section meetings are being planned for the near future. Notices will be sent out as to the date and place of the meetings.

The attention of all members is drawn to the fact that the increased membership dues authorized by the C.S.R.T. came into force on January 1st, 1949.

Just as we go to press comes word that the Annual Convention of the Ontario Society of Radiographers will be held at the Royal Connaught Hotel, Hamilton, Ont., June 2nd, 3rd and 4th. Details will be announced later.

Members are requested to make their hotel reservations through Mr. George Reason, Medical Arts Building, Toronto.

—JANE MARTIN, R.T.,
Sub-Editor.

QUEBEC SOCIETY OF X-RAY TECHNICIANS

The opening meeting of the 1948-49 season was held on Saturday, October 16th, 1948, at l'Hopital Notre Dame de l'Esperance, St. Laurent, P.Q.

Miss A. F. Muirhead gave a report on the proceedings at the Quebec Convention. This was followed by a round table discussion on the training and working conditions of the x-ray technician. Certificates were presented to the successful candidates in the May examinations. A very enjoyable tea brought the meeting to a close.

The second meeting of the season was held

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at the Herbert Reddy Memorial Hospital, on November 27th, 1948.

The program, which was both novel and instructive, was arranged and carried out by Mr. Otto Raab, of X-Ray and Radium Industries Ltd., and no less enjoyable was the delightful tea which followed. Mr. Raab was assisted by Messrs. R. E. Deglow and W. E. Schaefer, of the Service Engineering Division of Kelly-Koett Co., of Covington, Ky. They gave a graphic demonstration of the Techron X-ray Unit, by means of Neon lights on a Control Panel, and in addition explained its operation. The different parts of the body are listed on the panel and the proper Kv and MAS for each is automatically selected. The technitian merely postures the patient, measures the part, trips the Bucky, and turns the Monitor to the particular body section required. Should the radiologist prefer films either lighter or darker, a simple adjustment may be made by a service engineer to meet his request.

The second part of the program consisted of a motion picture on Contact Therapy, showing the lesions before and after treatment, with accompanying technique charts. The apparatus is portable, and is very easily manipulated and adjusted. On account of the very short target-skin distance, a very high output of "r" per minute is obtained. A fairly low KV. (50-80) is used, and high surface dose is achieved, with a low depth dose. Contact Therapy is used for the treatment of superficial lesions and intra-oral lesions.

Miss Marion Wheeler, who for the past fourteen years, was x-ray technician at the Children's Memorial Hospital, Montreal, has been granted a year's leave of absence, and is touring South America. She spent an extended vacation in Bogota, Columbia, and is at present technician in a hospital at Manizales. She hopes to visit other cities before returning home. We all wish her a very pleasant trip and hope to hear more news from her at a future date.

—M. E. STEWART, R.T.
Sub-Editor.

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SASKATCHEWAN SOCIETY OF X-RAY TECHNICIANS

REGINA

Apparently when the Queen City gets into gear there is no such shift as low, but right into high. Three meetings of the Regina group have just been reported with good attendance and meaty material.

The first session convened at the Grey Nuns' Residence on October 25th with seventeen attending. The officers elected for 1949 were: Mr. J. P. Connell, President; Miss Sally Blondell, Vice-President; Mr. Percy Hunt, Second Vice-President, and Miss Apha Gayton as Secretary-Treasurer. It was decided that the third Thursday of each month would continue to be the regular meeting day. The continuation of the showing of films was approved. Following the meeting Mr. Hunt spoke on the Dominion Convention in Quebec, stressing certain changes in the Canadian Society Charter. Sister Hopcraft, as hostess, served another of her delightful lunches.

The November meeting was held at the Regina General Hospital on Thursday, the 18th. A demonstration of the radiography of the lumbar spine was ably presented by Mr. Jim Connell and another of the localization of foreign bodies in the eye by Mr. Mirwald. Plans for the Saskatchewan annual convention to be held in Regina in May were discussed—concluding with friendly discussions and a tasty lunch.

The December meeting was held on Thursday the 16th in the Medical Arts Clinic. Several new technicians were welcomed to Regina's group, namely: Doreen Symon, Donna Woodside, Kay Grad (a wanderer returned!), Pauline Toupin, Kay McDougall, Nan Ramsay, Evelyn Gray, "Red" Allen and Harold Mattinson. This certainly is a goodly acquisition in one mouthful! Under the leadership of Mr. Percy Hunt, who has consented to be chairman of the Saskatchewan Annual Convention, various committees were formed for planning the convention. Dr. R. M. Hall of the Medical Arts Clinic spoke of the course of lectures to begin in January. This course should be one of the highlights of the year and I am sure that all Regina technicians will do their utmost to attend every lecture. We in the outlying small communities certainly miss a great deal. Some day the "old order" may change, "yielding place to new." The rest of the evening was spent in entertainment—rousing community songs, games and contests to culture and nourish the Christmas spirit. Lunch was served and Irene Domes' angel-food "took the cake" and prize. Apparently a good technician can also be a good cook!

SASKATOON

The first meeting of the winter season was held on November 3rd, 1948, at the City Hospital, fifteen members present. It was decided that weekly meetings be held for a course on all phases of radiography. Mr. Derrick should be highly praised for his diligent efforts in conduting this course. It is recommended that all students aspiring for their "R.T." should take advantage of this course.

The regular monthly meetings are to be held on the second Wednesday of each month. Suggestions for the monthly programs were offered and discussed and if these suggestions materialize—I am sure that anyone missing a meeting will really regret it.

CONTRASTY SHADOWS

Your sub-editor was unable to step very hard on anyone's toes the last two months as an old chronic appendix suddenly became acute! Yes, I spent considerable time in the General Hospital but am now back in harness, though it fits a little loose! However, I believe a box of good vitamin pills should be distributed through the various centres that would accelerate a more matey and co-operative spirit. How nice it would be to receive a voluntary synopsis of the various meetings and x-ray happenings from each group! Apparently one must keep on his "spurs"; and keep on soliciting.

—D. M. MacKINNON, R.T.,
Sub-Editor.

TECHNICIAN WANTED

Applications are invited for position as senior male radiographer in x-ray department of 203-bed hospital. Over 6,000 diagnostic examinations done yearly, deep and superficial x-ray therapy and radium therapy. Completely new diagnostic department about to be opened. Contains two high milliamperage diagnostic units, new darkroom and equipment, phototimer. Deep therapy department new two years ago. Staff will total 6 members and under direction of certified specialist in diagnostic and therapeutic radiology.

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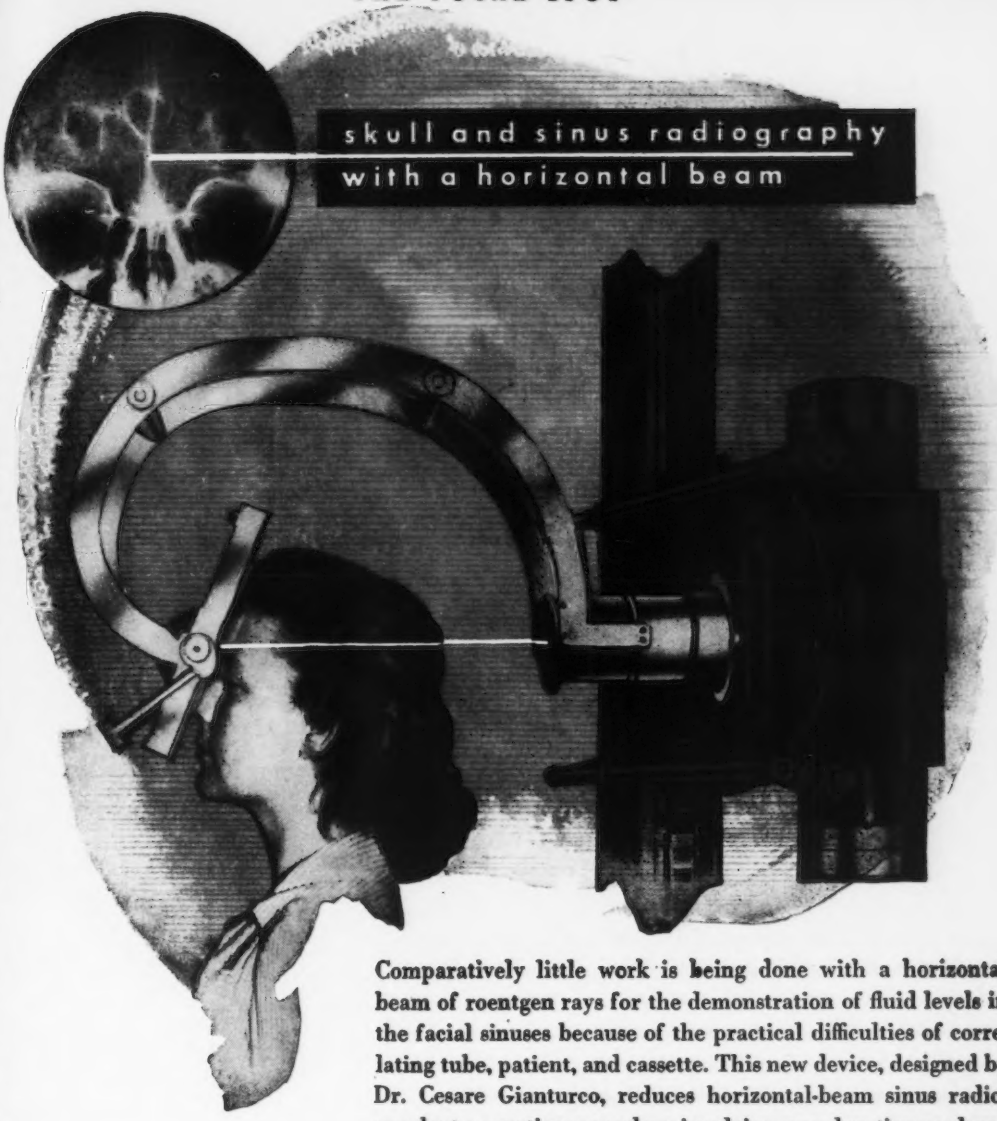

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